



COLORADO

**Hazardous Materials
& Waste Management Division**

Department of Public Health & Environment

How is water quality measured at Rocky Flats?

The Soil Water Database contains approximately 6.9 million records for all media, of which approximately one million records are for groundwater, 690,000 records are for surface water and 121,000 records are for sediment.

Groundwater monitoring has been conducted at the site since the first groundwater monitoring wells were installed in 1954. Groundwater data collected from 939 UHSU wells and 68 LHSU wells included analyses for hazardous, nonhazardous and radiological constituents to give site managers a comprehensive understanding of the nature and extent of groundwater contamination. From these results, a screening process identified several analytes of interest in groundwater: some industrial solvents, nitrate/nitrite, sulfate, fluoride, nickel, chromium, and uranium isotopes. The groundwater monitoring network currently consists of 88 wells.

The Colorado Water Quality Control Commission established the groundwater use classification as surface water protection. Therefore the standards for groundwater are the state surface water standards. Four groundwater treatment systems currently capture and treat contaminated groundwater before it reaches surface water.

The fact that all contaminated groundwater at the site emerges to surface water before leaving the Central Operable Unit (COU) simplifies the water pathway in the conceptual site model. Surface water monitoring has been conducted at Rocky Flats throughout the site's history, from 1952 to the present. Surface water data have previously been collected from 404 locations and sediment data from 369 locations in four drainage basins. Post-closure surface water monitoring is dictated by the Rocky Flats Legacy Management Agreement and 19 locations are currently sampled. Several of these locations are continuously monitored. Since closure, the surface water upstream of the terminal ponds (in the Central Operable Unit) has not always met Colorado surface water quality standards for a few analytes, but surface water leaving the Central Operable Unit has always been below standards.

The surface water standard for plutonium at the site is 0.15 picocuries (trillionths of a curie) per liter (pCi/L). That limit compares with the national drinking water standard of 15 pCi/L for alpha radiation emitters like plutonium. The site's very strict standard for plutonium ensures that even very slight movement of plutonium from soil to surface water is detected.